MEDICAL PROCEEDINGS

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REDAKSIONEEL · EDITORIAL

DIE MONDELINGE INENTINGSVELDTOG TEEN POLIOMIËLITIS GEDURENDE DIE WINTER

Elders in hierdie uitgawe publiseer ons 'n volledige amptelike verklaring bevattende wetenskaplike agtergrondgegewens oor die immunisasieveldtog met 'n mondelinge entstof wat eersdaags in Suid-Afrika van stapel gestuur word. Die Unie-departement van Gesondheid kan gelukgewens word met die feit dat hy betyds stappe gedoen het om mediese praktisyns so volledig oor die eienskappe van die entstof in te lig.

Die besonder omvattende verklaring wat uitgereik is, behoort egter aangevul te word in een besondere opsig waarop ons reeds die aandag gevestig het in die redaksionele kolomme van ons uitgawe van 25 Februarie 1961 op bladsy 68. Dit het betrekking op persone wat met die entstof behandel sal word en reeds kortikosteroïede ontvang. In sy *Derde Verslag* uiter die Wêreldgesondheidsorganisasie se Komitee van Deskundiges insake Poliomiëlitis (1960) die volgende waarskuwing op bladsy 26 van die monograaf:

‚Sorg moet aan die dag gelê word by die toediening van die lewende poliovirusentstof aan persone wat met kortikosteroïede behandel word . . . dit geld veral vir drievoudig negatiewe volwassenes.'

Die Minister van Gesondheid het onlangs aangekondig dat die veldtog 'n aanvang sal neem in Mei, d.w.s. op 'n tydstip van die jaar wanneer die entstof verwag kan word om op die meeste behandelde persone te ‚vat.' Die presiese datums vir die veldtog in verskillende

THE WINTER ORAL VACCINATION CAMPAIGN AGAINST POLIOMYELITIS

We publish elsewhere in this issue a full, official statement setting out scientific background data for the immunization campaign shortly to be undertaken in South Africa with an oral vaccine. The Union Health Department is to be commended for taking timely steps to inform medical practitioners so fully about the properties of the vaccine.

The very comprehensive statement which has been issued needs to be supplemented in one particular respect, to which we drew attention editorially in our issue of 25 February 1961 at p. 68. This refers to potential vaccinees receiving corticosteroids. In its *Third Report* the WHO Expert Committee on Poliomyelitis (1960) utters the following note of warning at p. 26 of the monograph:

'Care should be taken in administering live poliovirus vaccine to persons undergoing treatment with corticosteroids . . . particularly triply negative adults'.

The Minister of Health recently announced that the campaign will start in May, i.e. at a time of the year when maximum 'takes' can be expected. The exact dates for the campaign in the various parts of the country will be determined in consultation with the very numerous local authorities involved.

The vaccine itself will be supplied free of charge by the Union Department of Health to local authorities and the teams under its own direct control.

dele van die land sal vasgestel word na oorlegpleging met die talle plaaslike besture wat by die aangeleentheid betrokke is.

Die entstof self sal gratis deur die Uniedepartement van Gesondheid tot beskikking gestel word van plaaslike besture en die spanne wat onder sy regstreekse beheer staan.

Op hierdie stadium is die praktiese moeilikhede so groot dat dit nie moontlik is om die mondelinge entstof tot beskikking van private praktisyns te stel nie. Hantering van die entstof in bevrore houers is noodsaaklik. Aangesien inenting op 'n uniale skaal binne 'n beperkte tydperk van 'n paar dae gedoen moet word, is dit onmoontlik om die krag van die entstof te kontroleer as dit eenmaal die fabrikante verlaat het, tensy strenge toesig oor die verspreiding daarvan gehou word.

Daar word verwag dat 5.7 miljoen persone tydens die Unie-veldtog behandel sal word. Hierdie syfer is gebaseer op die volgende ouderdoms- en rassegroepe onder die bevolking wat aan gevaar blootgestel is:

Bantoes (reservate)	3 maande tot 6 jaar.
Bantoes (andere)	3 maande tot 9 jaar.
Asiate (Natalse platteland)	3 maande tot 9 jaar.
Asiate (andere)	3 maande tot 29 jaar.
Kleurlinge	3 maande tot 29 jaar.
Blankes	3 maande tot 29 jaar.

Afgesien van hierdie groepe sal alle swanger vroue en alle immigrante uit Europa en Noord-Amerika ook behandel word.

Iedere persoon wat geënt word, sal drie dosisse ontvang. Met ander woorde, ongeveer 18 miljoene dosisse van die entstof word vir verspreiding in gereedheid gebring.

Daar word verwag dat daar 'n jaarlikse opvolgingsveldtog sal wees om nuwe persone op die gewone manier te behandel. Voorsiening word ook gemaak om die doeltreffendheid van die veldtog serologies na te gaan.

Die Unie-departement van Gesondheid onderneem een van die uitgebreidste veldtogte wat nog ooit aan die duskant van die Ystergordyn aangedurf is. As hierdie geweldige onderneming met welslae bekroon word, sal dit poliomiëlitis in Suid-Afrika geheel en al uitroei. Deur die mediese professie volkome in sy vertroue te neem, en deur dokters betyds te voorsien van voldoende wetenskaplike inligting oor die entstof, het die Gesondheidsdepartement die probleem aangepak op 'n wyse wat slegs die goedkeuring kan wegdra van almal wat by die saak betrokke is. Ons is ook seker dat die veldtog nou die volle steun sal geniet van die mediese professie wat in 'n posisie is om waardevolle hulp te verleen om die sukses van die veldtog te verseker.

The practical difficulties at this stage are so great that it is not feasible to make the oral vaccine available to private practitioners. The handling of the vaccine in frozen containers is essential. As vaccination must take place within a restricted period of a few days on a Union-wide basis, it will be impossible to control the potency of the vaccine once it has left the manufacturers, unless the distribution is supervised very strictly.

The Union campaign is expected to cover about 5.7 million persons, based upon the following age and racial groups in the population at risk:

Bantu (Reserves):	3 months to 6 years.
Bantu (Other):	3 months to 9 years.
Asiatics (Natal, rural):	3 months to 9 years.
Asiatics (Other):	3 months to 29 years.
Coloureds:	3 months to 29 years.
Europeans:	3 months to 29 years.

In addition to these groups, all pregnant women and all immigrants from Europe and North America will receive cover.

Each vaccinee will receive 3 doses, so that about 18 million doses of the vaccine are being prepared for distribution.

It is expected that there will be an annual follow-up, when new vaccinees will be dealt with in the usual way. Provision is also being made for a serological check on the efficacy of the campaign.

The Union Health Department has undertaken one of the most extensive immunization campaigns ever attempted on this side of the Iron Curtain. Success in this tremendous undertaking may well wipe out poliomyelitis in South Africa. By taking the medical profession fully into its confidence and by supplying it with adequate scientific information about the vaccine in good time, the Health Department has tackled the problem in a way which can only call forth approval from all concerned. We also feel sure that the campaign will now enjoy full support from the medical profession, which is in a position to render such important assistance in ensuring the success of the campaign.

ABSTRACT

ASPIRIN AND DIABETES MELLITUS

The disappearance of glycosuria and the return of fasting blood sugar to normal in a young diabetic during aspirin treatment for acute rheumatism led to re-investigation of the effect of salicylate in diabetes mellitus.

The authors confirm previous observations that an intensive course of aspirin will abolish glycosuria and lower the fasting blood sugar to normal or near normal in mild to moderately severe diabetics. Doses of 1 to 1.6 g. were taken 4-hourly, omitting one dose in the middle of the night, to maintain as high a serum salicylate level as possible without inducing serious undesirable symptoms. Two patients complained of tinnitus, and all but one had dulling of hearing, which was mild in three. These symptoms disappeared soon after aspirin was discontinued.

[Reid, J., MacDougall, A. I. and Andrews, M. M. (1957): Brit. Med. J., **2**, 1071.]

TUMOUR-FORMING AMYLOIDOSIS OF THE LUNG

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Tumour-forming amyloidosis of the lung is a rare entity. Up to 1958, when Bergmann and Linder[1] reviewed the literature and added a case of their own, only 14 cases had been reported. The lesions may be solitary or multiple and while they may not be associated with the production of symptoms, they can produce bronchial obstruction and may, especially when solitary, lead to an erroneous clinical diagnosis of pulmonary malignancy.

The following case is the first recorded in South Africa.

CASE REPORT

The subject was a White elderly male (*aet.* 82 years) admitted to hospital with gangrene of the toes. During routine investigation an X-ray of the lungs showed multiple, varying sized opacities (Fig. 1). The condition was regarded as an example of 'Pneumopathia osteoplastica racemosa.' The patient was exhaustively questioned concerning his pulmonary status but was emphatic that apart from one incident of pleurisy many years ago he had never had anything wrong with his lungs. He showed no objective signs of pulmonary disability.

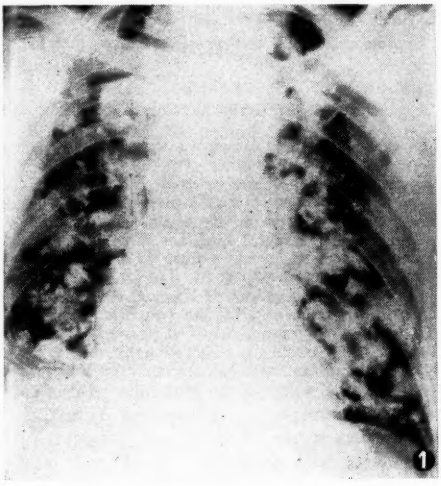

Fig. 1. X-ray of patient on admission shows extensive dense, irregular, woolly mottling of both lungs.

A few days after admission to hospital he died from a cerebral vascular accident. A post-mortem examination was done in the country, the right lung being removed and sent for examination. No other organs were examined at this autopsy.

The Right Lung. The specimen was received in formalin. It consisted of an intact right lung which showed well-marked chronic diffuse fibrous pleurisy.

On section the lung was studded with multiple stony-hard 'calculous' masses (Fig. 2). On dissection, these calculous masses were found attached to the pulmonary vessels (arteries and veins). They compressed the surrounding lung tissue but did not invade. No masses were found in an intra-bronchial or intra-vascular position. Although attached to vessels, they could be removed therefrom quite easily by blunt dissection.

Histology. Numerous blocks were taken from the lung for histological examination. These showed the presence of eosinophilic, amorphous trabeculae and laminae poor in cells which (Fig. 3) reacted positively with the Methyl Violet, Congo Red and Silver methods for amyloid. Bright blue fluorescence was observed with Thioflavine T. Sections of the tumour masses separated from the lung were also positive for amyloidosis. In many of the amyloid foci there were remnants of the lumina of blood vessels and amyloid replacement of the smooth muscle of blood vessel walls could be seen at all stages. Many of the early lesions were surrounded by abundant plasma cells; older lesions often showed foreign-body reaction, with calcification or ossification.

Chemical Examination. This showed the presence of protein in the amyloid tumours. Tests for fat and carbohydrates were negative. Calcium, magnesium, sodium, carbonates and chlorides were found to be present.

Diagnosis. Primary tumour-forming amyloidosis of the lung.

DISCUSSION

The amyloids are a group of glycoprotein complexes of obscure pathogenesis. The protein moiety is more abundant and is characterized by the presence of tyrosine, hydroxyproline, glycine anad abundant tryptophan. The carbo-

hydrate component averages 4% and includes glucosamine, galactose, mannose and fucose.

Whether amyloid contains gamma globulin as maintained by Mellors and Ortega[2] and Vasquez and Dixon[3] (using the Coon's fluorescent staining technique) or whether the material contains chondroitin sulphate or heparin sulphate as suggested by Hass[4] and by Meyer[5] remains open at present (Calkins *et al.*[6]).

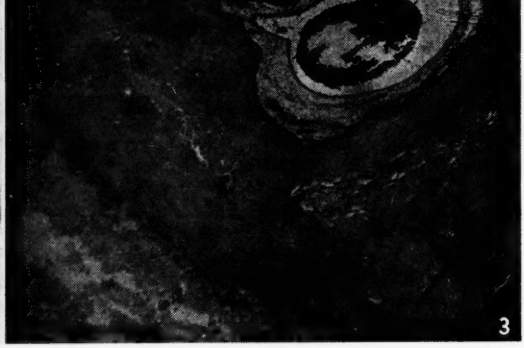

Fig. 2. Photograph of the lung. Note the calculous-like masses in the lung tissue. These were stony-hard.

Fig. 3. Section of the Lung and High power view. Section shows the amorphous mass of amyloid surrounding a blood vessel in the lung.

When amyloid accumulates in the body, serious disability may arise according to the site and extent of its formation. The following practical classification is modified from that of Reimann *et al.*[7]

AMYLOIDOSIS

This comprises deposits of eosinophilic, hyaline, amorphous material in the tissues giving characteristic reactions with Iodine, Methyl Violet, Congo Red, Silver, Periodic-Acid leucofuchsin and containing abundant tryptophan.

Recent studies with the electron microscope have shown that, in fact, amyloid is finely filamentous, the filaments being such thinner than in the case of collagen and lacking the characteristic 640A periodicity (Calkins *et al.*[6]).

1. SECONDARY AMYLOIDOSIS

1.1 *Typical*:

(*a*) Gives typical amyloid reactions;

(*b*) Occurs especially in kidney, liver, spleen;

(*c*) Occurs as a result of chronic infective fevers and suppurative or necrotizing processes.

(*d*) When it affects the kidney it may cause the *nephrotic syndrome* or *renal failure*. When it affects the spleen it causes *splenomegaly*. It may similarly cause enlargement (eventually contraction) and functional failure of many organs, e.g. liver, adrenals, thyroid.

1.2 *Atypical*:

(*a*) Reacts atypically with one or other of the amyloid reactions (paramyloid) and often stimulates foreign-body reaction;

(*b*) Occurs in many organs, especially the kidney;

(*c*) Occurs in associaion with *multiple myelomatosis*.

2. PRIMARY ATYPICAL AMYLOIDOSIS

This arises without known cause and often reacts atypically with one or other of the amyloid methods, and often stimulates foreign body reaction.

2.1 *Diffuse Form.* Diffuse collections of atypically reacting amyloid occur in organs such as heart, tongue, larynx, trachea, bladder. This leads to enlargement and functional failure of the organ concerned, through atrophy of the parenchyma.

2.2 *Localized Nodular or Tumour-Forming Type.* This usually occurs in muscle (smooth or striated), skin, lymph nodes, mucosa of digestive and urinary tracts, larynx, trachea and occasionally in the lung. It is very rare in the liver, spleen, kidney or brain.

Amyloidosis should be remembered as a constant concomitant of rheumatoid arthritis, as a common cause of death of patients with paraplegia and decubitus ulcers, and is the most important single cause of death of patients with leprosy.[6] Two familial forms are indigenous in certain Mediterranean countries.[8, 9]

Trieger *et al.*[10] and Calkins *et al.*[6] have shown that gingival biopsy is a useful diagnostic aid in suspected cases.

It is an easy matter to produce amyloid experimentally, e.g. by injections of Sodium Caseinate (Eklund and Reimann,[11] Calkins *et al.*),[6] Fruend's Adjuvant repeated injections of

bacilli[12-14] or vaccines.[15] These have not shed much light on the pathogenesis of the condition in man.

It has been postulated that amyloid represents an *in vivo* accumulation of antigen-antibody precipitate.[16, 17] This is supported to some extent by the significant increases in serum concentrations of gamma globulin in experimentally produced amyloid[6, 16] and by the demonstration of circulating preciptating antibodies to casein in caseinate-produced amyloidosis.[6] Teilum[18] has noted that the administration of cortisone accelerates amyloid production, especially in the presence of vitamin C deficiency. Obviously the elucidation of the pathogenesis requires further research. Nevertheless, the indications that secondary amyloidosis represents an antigen-antibody precipitate appear to be strong. The position regarding the primary atypical forms is not so satisfactory and the present case sheds no light on the problem.

Histological examination confirmed the view expressed by Bergmann and Linder[1] that the condition arises in the smooth muscle of vessel walls. Origin in muscle is characteristic of primary atypical amyloidosis.

SUMMARY

(*a*) A case of primary tumour-forming amyloidosis of the lung is presented.

(*b*) The classification and pathogenesis of amyloidosis are briefly discussed.

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A CASE OF FULL-TERM EXTRA-UTERINE PREGNANCY

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In view of the relative infrequency of advanced extra-uterine pregnancy and the rarity of resulting live births, we wish to record the following case.

On 26 October 1960, an African female, aged 25 years, was referred to the Maternity Section of the Harmony Mine Hospital, with the diagnosis of extended breech at term and failed external version. Her previous history was of a still-birth in 1957 after a 3-day labour, without other complications.

In 1959, when 5 months' pregnant, she underwent emergency laparotomy for an ectopic pregnancy.

Her present history was of about 34 weeks' amenorrhoea, but her 'dates' were vague. She stated that, when about 3 months' pregnant, she experienced severe pain in the right lower abdomen; it made her feel faint. The pain lasted for about 1 week, getting gradually less severe and then did not recur. Foetal movements were normal.

About 1 month before admission she had stabbing pains in the right side subcostally. This was intermittent and did not trouble her unduly.

No vaginal bleeding was reported during the pregnancy, but there was some leucorrhoea.

General examination revealed no physical defects apart from a median subumbilical scar; measurements were within normal limits. The placental bruit was very loud and to the right of the umbilicus.

The foetal heart beat was normal and the lie L.S.A. The breech was 'high.' Antero-posterior X-rays submitted showed a frank breach. Lateral X-rays were not taken.

Despite her thin musculature, no abnormal ease of palpation of foetal parts was evident, but one could not outline the upper border of the uterus.

Vaginal examination did not distinguish any mass apart from the uterus and the breech, lying high, could not be felt.

On 31 October 1960, at 11.30 a.m. under general anaesthesia, external version was attempted but failed and it was decided to await the onset of labour and do an elective caeserean section; 6 hours later slight vaginal bleeding occurred and persisted for 4 hours, when a large decidual cast was expelled, the foetal heart became faint and the rate increased. Pain was not a feature apart from lumbar and subcostal pain of moderate severity. Vaginal examination revealed an os of 1 finger.

Under general anaesthesia a midline suprapubic incision was made. This revealed the foetus lying free in the abdominal cavity within the intact bag of membranes and an estimated 3–5 pints of free and clotted blood around it.

The membranes were torn open. The cord was clamped and the child handed to the attendants. Rapid transfusion of 4 pints of blood improved the maternal condition from a precarious to a reasonable state and one was able, with a little dissection, to remove the placenta from its remaining attachments to the posterior aspect of the body of the uterus, the right broad ligament and the caecum and small bowel. More than three quarters of the placenta had been detached previously by a massive retroplacental haemorrhage and removal was relatively easy.

The main feeder vessels were in the right broad ligament, from ovarian and uterine arteries; these were ligated.

Most of the broad ligament was excised and also a small stump of tube remaining on the right side.

The left tube and ovary appeared normal. The back of the uterus was oversewn in 3 places to control haemorrhage.

The child was born apparently lifeless and in asphyxia pallida. It was handed over to Dr. Hanekom, the anaesthetist, who aspirated blood and mucus from the trachea, injected Lobeline and applied manual artificial respiration whilst at the same time coping with the pressure transfusion and the anaesthetic to a desperately ill mother.

Having controlled the haemorrhage, one was able to dispense with the services of Dr. Hunter, who left the patient and performed mouth-to-mouth respiration on an apparently dead child until a faint wail heralded the first natural breath.

The infant at birth weighed 5 lb. 14 oz. and appeared full-term. Suckling and lactation were normal and, on discharge from hospital 21 days after birth, his weight was 5 lb. 16 oz.

No abnormalities were detected in the child.

Subsequent examination of the placenta showed numerous areas of recent and old infarction. The cord was 14 inches long.

DISCUSSION

Ware (quoted by Dixon and Stewart[1]) collected 560 reported cases of advanced intra-abdominal pregnancy between 1809–1946 and of these 249 had been recorded between 1933 and 1946. In his series the maternal mortality was 14.85% and the foetal mortality 75.6%.

Charlewood and Culiner[2] report a series of 52 cases over 20 years.

One would expect a greater incidence among the more primitive peoples because with medical advance, the ectopic (which is the forerunner of the extra-uterine pregnancy, excluding the primary ovarian pregnancy) is diagnosed and treated. This saves the lives of many women and minimizes the possibility of survival of an extruded embryo.

Dixon and Stewart[1] are in accord with this expectation and report a series of 10 cases with survival of all the mothers and 4 of the children.

Many of the reported cases are in the region of 40 years of age and give a history of prior ectopic pregnancies—often on the same side as the extra-uterine gestation. It is possible that a further tubal abortion takes place into the layers of the broad ligament, there expands the ligament and embeds the placenta, later rupturing through the upper layer of the ligament.

Pelvic peritonitis, being a precursor of ectopic gestation, must be considered a factor.

The diagnosis of extra-uterine gestation is based on a constant awareness of its possibility, especially with a history suggestive of tubal abortion in the first trimester.

Abdominal examination may reveal abnormal lies with excessive ease of palpation of

foetal parts in females with a thin musculature.

Often the upper border of the uterus cannot be distinguished. Vaginal examination may reveal the uterus apart from the gestation sac and the cervix is often firm and directed anteriorly; but in many cases the sac is so firmly adherent to the body of the uterus that it cannot be distinguished.

Radiological examination in the lateral plane may show the child's backbone overlying the mother's spine—an absolute diagnostic sign. There may be no uterine shadow round the foetus, but often the thick membranes give a false impression. Maintained abnormal position for a long time is suggestive.

If pregnancy continues over 2 months after the death of the foetus, an ectopic gestation is diagnosable.

As far as treatment is concerned, opinion is unanimously in favour of immediate laparotomy, irrespective of the stage of viability of the foetus. Even close to term the hazard of an intra-abdominal catastrophe makes procrastination unjustified. Where the foetus has been proven dead, some advise delay in the hope that the placental blood supply will diminish.

The main problem lies in the handling of the placenta. Removal may engender torrential, uncontrollable haemorrhage and though the maternal morbidity is much less with removal, it is considered best not to attempt removal unless this is easy.

Partial removal can result in serious haemorrhage, difficult to control. Where the placenta is to be left, the membranes are removed close to it and the cord tied and cut short. No drainage should be instituted, due to the certainty of infection. Later laparotomy has shown absorption of the placenta in as little as 3 months' time.

Where the placenta remains *in situ*, lactation is interfered with due to the action of placental hormones on the anterior pituitary.

The maternal prognosis has steadily improved due to blood transfusion and antibiotics, the cause of death being shock, haemorrhage and infection.

The outlook for the foetus is poor. Suter and Wichser[4] conclude that only 25% would be born alive and of these only 50% would survive the first week. A third of those born alive would be deformed, 75% of these deformities affecting the cranium.

It is considered that the high incidence of deformity is due to early interference with placental blood supply.

I thank Dr. C. Hutchinson, Senior Medical Officer of Virginia Mine, for referring this case and Drs. G. P. Hunter and J. Hanekom for their professional assistance, without which a successful result could never have been obtained. I am indebted to Dr. A. M. Coetzee, Chief Medical Officer, Rand Mines, for authority to submit this case for publication.

I would like to take this opportunity of expressing my gratitude to the librarians of the Witwatersrand Medical School for their unfailing courtesy and assistance in the matter of obtaining references for the varous articles we have submitted.

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MEMORANDUM

ORAL POLIOMYELITIS VACCINE*

Preparation. This orally administered vaccine consists of suspensions of live poliovirus prepared from the highly attenuated strains of all 3 types developed by Prof. A. B. Sabin of the United States of America. The virus suspensions are propagated on monkey kidney tissue and processed and tested by methods based on his recommendations. The vaccine has been approved for release by the Union Health Department. It has been shown to be free of extraneous pathogenic viruses. It does not produce paralysis in monkeys by intracerebral inoculation of large doses.

The following virus strains, obtained from Professor Sabin, were used in the preparation of the vaccine:

Type 1: L Sc 2 ab; *Type* 2: P 712 Ch 2 ab; *Type* 3: Leon 12 ab.

The vaccine contains no preservative. The normal acceptable colour, due to phenol red indicator, is a varying degree of cherry red. The variation is due to a varying content of CO_2. Loss of CO_2 during use increases the depth of the colour but has no effect on the efficacy or safety of the vaccine. A yellow colour or lack of transparency is an indication for discarding a container of vaccine. When

* This Memorandum has been prepared for the Union Health Department by Dr. P. A. D. Winter.

enclosed in containers with CO_2 ice under pressure, vials occasionally acquire a yellow colour due to excess CO_2 gaining admission to the vial. This colour reverts to cherry red on exposure to the atmosphere when dilutions are made. Such vials are fit for use.

Dosage. The recommended dose is at least 100,000 tissue culture doses (TCD) of virus (roughly 100,000 virus particles) of each type of poliovirus. The object of the vaccination is to produce a symptomless intestinal infection of the 3 virus types with the development of homologous antibodies. This intestinal infection is followed by an intestinal immunity and resistance to further infection by 'wild', paralysis-producing poliovirus or by attenuated vaccine strains. Virus dosage lower than the recommended 100,000 TCD may result in a lower percentage of 'takes' or 'immunogenic activity'. This may be due to loss of potency from exposure to unfavourable temperature and other conditions, chemicals, contamination during handling or over-dilution.

Potency. At the time of manufacture the concentrated vaccine contains in excess of 10,000,000 tissue culture doses per ml., i.e. 100 human doses per ml. or one human dose per 0.01 ml. If the concentrated vaccine is diluted 1 : 50 (i.e. 1 ml. vaccine in 49 ml. sterile saline or cold chilled sterile Syrup Simplex B.P., or the specially prepared raspberry flavoured syrup) 0.5 *ml.* will contain one human dose. The volume of the concentrated vaccine is usually ignored and the virus fluid added to 50 ml. diluent.

Methods of Use. The object of the vaccination is to introduce into the alimentary tract sufficient viable virus to cause an infection with the faecal excretion of virus for an average period of about 30 days.

This can be achieved by squirting a measured dose of suitably diluted vaccine fluid into the mouth by syringe or feeding it by teaspoon. It can be added to sugar water, saline, milk, plain sucrose syrup, granulated sugar, sugar lumps or a suitable type of plain sweet that has absorbent properties and has approved flavouring and colouring ingredients that have been shown not to have a detrimental effect on the viability of the attenuated poliovirus.

Automatic Syringe Method. This method is suitable for mass administration because of ease and speed of administration. The automatic syringe consists of a 2 ml. syringe with a spring-loaded plunger in a metal holder. To this is attached a valve holder.

A length of rubber tubing allows virus fluid to be drawn into the valve fitting and to be ejected through a needle or cannula attached to the front.

The plunger is set at 0.5 ml. and that volume of fluid is sprayed on to the back of the vaccinee's throat. The rubber tubing passes through a rubber sealed screw cap into the diluted virus fluid contained in an 8 oz. Boston round type flask or suitable plastic bottle.

Dilution. The flask is marked at the 50, 100 and 150 ml. levels and 1, 2 or 3 ml. of concentrated virus fluid after minimum thawing under cold tap water, are withdrawn under strict aseptic precautions and introduced into the chilled sterile bottle. The vial is immediately refrozen. The volume is made up to the required level with cold sterile diluent: sugar water, raspberry syrup, etc. In this 1 : 50 dilution, 0.5 ml. will contain at least 100,000 TCD, i.e. one human dose. This container is kept cold by surrounding it with ice cubes in a wide-necked thermos flask or similar insulated container.

Dropper Pipette. Glass tubing of suitable diameter is fitted into the cap of a Boston round flask and a teat attached. The Boston round flask is marked at 50, 100 and 150 ml. levels; 1 ml. of vaccine for every 10 ml. of diluent vaccine is introduced. The volume of the concentrated vaccine is ignored. The dilution is 1 : 10 and 150 ml. of this dilution is such that 0.1 ml. contains sufficient vaccine for 1,500 individuals. The dose of 0.1 ml. is contained in one drop of the calibrated pipette. This can be dropped on to granulated sugar, sugar lump, syrup, milk or infants food and fed to the vaccinee. The flask must be kept in contact with ice.

Sweets, Pastilles, etc. For small numbers or for difficult children pastilles and sweets may be used and can be ordered in limited quantity.

Vaccination Schedule. The ideal approach is to administer each strain separately and to give a fourth feeding of trivalent vaccine. Thus, types 1, 3 and 2 are administered at a minimum of 2 months apart, and this is followed up after at least 2 months by a feeding of trivalent vaccine. The minimum 2-monthly period is laid down to ensure as far as possible a complete elimination of the previous virus from the intestinal tract so as to minimize interference between virus types, thus increasing the percentage of 'takes', i.e. immunogenic efficacy.

It has also been found that the administration of trivalent vaccine on 3 occasions gives very satisfactory results. This has the advantage that complete immunity can be achieved in about 70 per cent of persons by one feeding

and is therefore indicated where 100 per cent of the vaccinees are not expected to complete a regular course. This is the rule in all campaigns where an 80 per cent attendance at each phase is considered to be very good.

Time of Administration. Apart from interference between the poliovirus types, other enteroviruses such as Echo virus and Coxsackie viruses have been shown to interfere with the establishment of the poliovirus in the alimentary tract. The percentage of 'takes' is then lowered and vaccination less efficient. This occurs mainly during the summer months when enteroviruses are more prevalent. So, ideally, the vaccine should be administered during the colder months of the year. However, mass vaccinations repeated on 2 or 3 occasions have been shown to overcome the effect of interfering enteroviruses completely.

Development of Immunity. Within about 4 days after administering the vaccine an intestinal 'block' to poliovirus of the same type is established. Exposure to 'wild' virulent, paralytogenic virus at this stage does not result in an infection. Conversely, however, if the 'wild' virus is present when the vaccination is done it has no effect on the course of the natural disease. After a successful vaccination, measurable antibodies are present after a week and good immunity is established in 2–3 weeks.

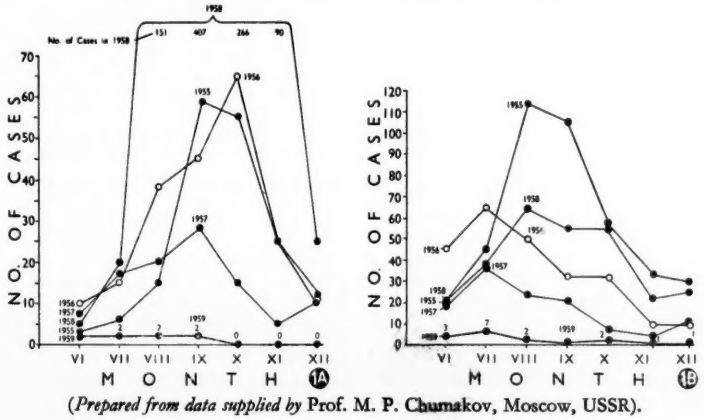
Vaccination During an Epidemic. Because of the rapid development of the 'blocking' effect and the formation of neutralizing antibody, the oral vaccine can be used effectively to limit the extent of epidemic poliomyelitis of a known poliovirus strain. As soon as it is judged that paralytogenic virus has been or may be introduced into a community, a mass vaccination of all the population at risk must be carried out with extreme urgency. The 'wild' virus circulates with great rapidity and delays in introducing the attenuated virus can easily render the vaccination ineffective. In this respect a great deal can be said for anticipating an epidemic.

Stability of the Vaccine. The concentrated vaccine stored in a 'deep-freeze' type of refrigerator at a temperature of −20°C. retains undiminished potency for one year. At the temperature of melting ice, i.e. at +0.5°C., the viability of the virus remains unimpaired for 2 weeks. At +4°C. (ordinary household refrigerator temperature) the virus remains viable for one week. At room temperature loss of potency will depend on temperature conditions, but a limit of hours to one day should be observed. In general, concentrated virus and virus preparations, syrup or sweets, should be kept frozen or in contact with ice. Diluted virus solutions should be used within 24 hours and should be kept in contact with ice or frozen during that period. This applies particularly to handling the fluids in the field. As the virus is sensitive to ultra-violet irradiation, protection of fluids against sunlight is essential.

Results of Oral Vaccination. At the International Poliomyelitis Conference at Copenhagen in July 1960, it was reported that over 80,000,000 persons had been vaccinated with

Fig. 1. Poliomyelitis in Estonia (1A) and Lithuania (1B) in 1955-1958 and following oral administration of live poliovirus vaccine to a portion of the population in April and May 1959.

	Estonia	*Lithuania*
Total Population:	1,196,000	2.700,000
Total Vaccinated:	694,000	546,000
Ages	2 Months-50 Years	2 Months-19 Years



(*Prepared from data supplied by* Prof. M. P. Chumakov, Moscow, USSR).

the Sabin strains of attenuated oral poliomyelitis vaccine. There had been no untoward reactions and good immunity resulted from the vaccinations. Fig. 1 (provided by Dr. Sabin) depicts graphically the results obtained in Lithuania and Estonia.

Vaccine manufactured and tested at the Poliomyelitis Research Foundation, Johannesburg, has been used in field trials since August 1959. To date, about 4,500,000 doses of type 1 and 400,000 doses of trivalent vaccine have been issued.

In assessing the potency of this vaccine, a large number of blood specimens has to be tested in order to obtain a significant number lacking antibodies to one or more of the 3 types of poliovirus. This has presented some difficulty, particularly the taking of follow-up specimens. These studies were done in widely varying population groups, climatic conditions and hygienic standards. Differences in results must be interpreted accordingly, as the prevalence of other circulating enteroviruses plays an important part in the number of 'takes' achieved after one feeding. The results are shown in Tables 1 and 2.

In general it can be said that under average living conditions, one feeding with trivalent vaccine converts to positive 70–80% of the 'negative' antibodies; that this figure is increased to about 90% at the second feed and that the third feed gives nearly 100% protection—as good an immunity as is ever achieved by any artificial immunization. This immunity, and the intestinal resistance induced by the vaccination, holds the great promise of virtual eradication of poliomyelitis by mass vaccination campaigns.

Safety. It has not yet been proved that one single case of paralytic poliomyelitis has been caused by the administration of Sabin strains in vaccinees or their contacts, and the number of vaccinations now probably exceeds 90,000,000. It means that the theoretical consideration of increased virulence to contacts on human passages has proved to be of very little importance as regards the safety of the vaccine.

Other extraneous pathogenic viruses and bacteria derived from monkey tissues can be eliminated by adequate laboratory procedures.

Of the non-pathogenic viruses, the so-called Simian agents which are naturally present in some normal monkey tissues, can be excluded by control procedures which bar from use tissues that show evidence of their presence and by an additional appropriate chemical treatment of the virus fluids. This is done on principle, because the significance of these agents is not known and as they have been actually administered to many millions without ill effect, they do not jeopardize the safety of the vaccine. Similar agents are present in all domestic animals and persons handling these animals or their carcases, are continuously exposed to these viruses with no apparent ill effects. Where evidence is available, it points

TABLE 1: ORAL VACCINE POTENCY CONTROL
(POLIOMYELITIS RESEARCH FOUNDATION)

Study Group	*Number of Vaccinations*	*Antibodies Acquired*				*Complete Immunity Acquired*
		Type 1	*Type* 2	*Type* 3	*All* 3 *Types*	
Mauritius Trivalent Infant ..	1	$\frac{8}{30}$: 26%	$\frac{32}{42}$: 76%	$\frac{12}{22}$: 55%	$\frac{52}{84}$: 55%	$\frac{16}{43}$: 37%
Rodrigues	1	—	$\frac{13}{20}$: 65%	$\frac{33}{44}$: 75%	$\frac{46}{64}$: 72%	$\frac{32}{46}$: 70%
Uganda	1	$\frac{4}{10}$: 40%	$\frac{14}{20}$: 70%	$\frac{3}{11}$: 27%	$\frac{21}{41}$: 51%	$\frac{14}{32}$: 44%
Boksburg Infants	1	$\frac{10}{20}$: 55%	$\frac{25}{28}$: 89%	$\frac{31}{38}$: 82%	$\frac{78}{95}$: 76%	$\frac{27}{47}$: 58%
Hope Training Home ..	1	$\frac{8}{8}$: 100%	$\frac{8}{8}$: 100%	$\frac{5}{7}$: 71%	$\frac{15}{17}$: 88%	$\frac{12}{14}$: 86%

TABLE 2: ORAL VACCINE POTENCY CONTROL. POLIO FOUNDATION CLINIC
(POLIOMYELITIS RESEARCH FOUNDATION)

Study Group	*Number of Vaccinations*	*Antibodies Acquired*				*Complete Immunity Acquired*
		Type 1	*Type* 2	*Type* 3	*All* 3 *Types*	
Polio Foundation Clinic	1	$\frac{22}{43}$: 52%	$\frac{55}{57}$: 97%	$\frac{55}{61}$: 90%	$\frac{132}{160}$: 83%	$\frac{88}{117}$: 75%
	2	$\frac{39}{43}$: 91%	$\frac{56}{57}$: 98%	$\frac{59}{61}$: 97%	$\frac{155}{160}$: 96%	$\frac{110}{117}$: 94%
	3	$\frac{40}{42}$: 95%	$\frac{57}{57}$: 100%	$\frac{59}{61}$: 97%	$\frac{158}{160}$: 98%	$\frac{114}{117}$: 97%

to the fact that these 'concomitant' viruses developing in tissue cultures, do not cause infections in human beings by ingestion.

Reactions. The vaccine contains minute quantities of antibiotics that have been used in the production phase of the virus fluid several months before use. Dilute solutions of these antibiotics lose antibiotic activity within a few weeks and as no preservative is added to the fluid, very likely loses its antigenic properties. At the time of issue, there can be present at the most 2 units of penicillin, 1 microgram of streptomycin and of neomycin per dose. The vaccine has been given with no reactions whatsoever to individuals who reported severe allergic reactions to the Salk type vaccine.

Coincidental illnesses often occur after administration of oral vaccine and are almost invariably associated with it. After administration of several million doses of South African vaccine, there has not emerged a pattern of reaction occurring at a specific period after ingestion of the vaccine virus and it is impossible to advise medical practitioners as to what type of reaction to expect and how to deal with it. If the vaccination gives rise to some clinical condition, it must be extremely varied, both as to its nature and the time of occurrence. Serious illnesses attributable to the vaccine have yet to be demonstrated and any symptoms or signs occurring after vaccination should only be attributed to the vaccine after all other possible causes have been eliminated. The question of reactions can only be settled if a large-scale controlled experiment is conducted with the alternative feeding of placebo and vaccine. Because of the observed innocuousness of the vaccine, this type of experiment, which is difficult to apply, has not been considered justifiable or necessary.

Age Groups. Serological surveys in South Africa have shown that the Bantu at the age of 10 has the same immune status, i.e. almost complete protection to all 3 poliovirus types, as the European of 30 years. About 80% of paralytic poliomyelitis occurs in the European children 6 years and under and in the Bantu of 5 years and under.

The oral vaccine has been shown to infect newborns shortly after birth, with the production of antibodies. This takes place in spite of the presence of maternal antibodies. However, the immune mechanism is not fully developed at birth and after 2 weeks a resistance to infection with the attenuated virus sets in which lasts up to about the third month. Antibodies developed after this age are of lasting nature.

Contra-indications. As the vaccine has little if any reaction, there is probably no true contra-indication to its administration. However, on principle it is recommended that persons who are confined to bed with a febrile illness and cases of diarrhoea, should be excluded from vaccination until they have recovered.

Tonsillectomy and Elective Surgery. There is no evidence that the trauma of tonsillectomy or dental extractions and other surgery, has any influence on the safety or efficacy of oral vaccination. On principle again, it is recommended that, where possible, an interval of 2 *weeks* or more before and *one week* or more after such surgery should be allowed.

Relationship to Other Immunization. Oral poliomyelitis vaccine has been safely and effectively given simultaneously with dipththeria, whooping cough and tetanus immunization. However, in order not to discredit the oral vaccine because of reactions produced by triple vaccine or smallpox vaccine, it is recommended that a 14-day interval be observed.

Restrictions. It is recommended that no carbonated, alcoholic or other flavoured drinks be taken for 2 hours after vaccination. This also applies to medicines. No restrictions as regards exercise or other activity of the vaccine need be applied, apart from severe exercise for about 2 hours after vaccination.

Salk Vaccination. Until such time as a complete course of oral vaccination has been given, Salk-type vaccination should continue as before. Thereafter oral vaccine should be considered to be the vaccine of choice for rapid and safe immunization at all ages from 3 months upwards.

Effectiveness. After a course of vaccination of 3 trivalent doses, the only sure method of gauging the immune status of the individual, is by submitting serum for a serological test. This would indicate the need, if any, for further immunization. For the test 5 ml. of clotted blood is required.

Mass Vaccination Campaigns. Three factors mainly influence the efficacy of the oral vaccine: loss of potency due to incorrect handling, type interference and interference by other enteroviruses. The first can be overcome by always keeping the vaccine in or near to the frozen state. The second factor is overcome by repeated ingestion at suitable intervals of all 3 types of poliovirus.

It has been shown that the effect of interfering enteroviruses can be eliminated by doing mass vaccination on repeated occasions and thus 'flooding out' the other viruses. In addition, the 'to-and-fro' effect, whereby vaccinees

who fail to take on one occasion become re-exposed by contact with an excretor of that particular virus type, is much enhanced by increasing the number of cases fed in a given area at the same time. Oral vaccination, therefore, is more likely to achieve its goal of poliomyelitis eradication by nation-wide mass campaigns.

Follow-up Vaccination. Once the community has been satisfactorily immunized, the circulation of natural, 'wild' poliovirus strains that gives rise to relative protection by means of the oral vaccination that nature has supplied up to now, is no longer possible. A high degree of susceptibility to poliomyelitis and conditions suitable for severe epidemics could thus develop, if oral vaccination is not continued so as constantly to immunize all susceptibles, such as newborn infants and immigrants. To overcome this hazard of mass artificial immunization, it may be desirable to make vaccination with oral vaccine compulsory within the first few months of life.

Duration of Immunity. The indications at present are that the immunity induced by live avirulent poliovirus lasts for many years and may be lifelong, as is the case with a natural infection. Persons vaccinated 10 years ago still have demonstrable antibody in the blood and the reduction in titre is of a low order.

SOME THOUGHTS ON CULTURE AND THE COMMUNITY*

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In discussing some thoughts on *Culture and the Community,* it is necessary to define what is meant by culture before proceeding with the expression of these thoughts.

In Chambers' *Etymological Dictionary*[1] culture is defined as the state of being cultivated or advancement or refinement, the result of such cultivation.

In Winkler-Prins' *Algemeene Encyclopaedie*[2] it is defined as the energy spent to improve any object or any intellectual faculty or otherwise such improvement itself, as the result of such output of energy. One cultivates not only agricultural land, but also intellect. The highest form of culture is man's enoblement by a harmonious development of his character, intellectual capacities, feelings, tastes and language. In this it is differentiated from civilization, which may be more of a superficial veneer. According to the higher or lower intellectual and moral development, one differentiates between populations of higher or lower culture. Those with well-developed cultures one designates as cultural nations, those with lower cultures as 'primitives.' Sometimes a differentiation is made between the inner spiritual culture and the more superficial material culture. The first of these is naturally the more important, whilst the latter is the accompanying phenomenon of the first. Civilization is then the rigid, mechanized culture.

According to Spengler, every culture is doomed to reach such a stage of rigidity and mechanization.

As culture thus is a process of enoblement of the human being for the purpose of enobling a community, first of all in family groups and later the community at large, the process of enoblement is clearly bound up with religious concepts and the growth of religions.

In the following paragraphs it is the intention to follow the religious concepts or cults as they were found amongst the primitives and some of the beliefs as found amongst some of the Bantu in present-day circumstances.

On the basis of the development from prehistoric to present-day man, customs have arisen which persist in various parts of the world. Some of these customs appear incomprehensible to us unless seen in the light of their origin. These origins cannot be discovered unless one goes back to the history of prehistoric man by means of a study of anthropology or anthropological findings and theories about comparative religions and, in some cases, related history of art.

Bouman[3] states:

> 'As far as our knowledge about the mentality of prehistoric man goes, we may presume that already in a very early stage of his evolution he had some vague conception of a hereafter. Otherwise it would be difficult to understand why he buried some of his dead. We can find traces of a funeral as far back as the late Mousterian epoch.'

He goes on to describe how the deceased was buried in a grave expressly dug, together with some implements and weapons. Many

* Valedictory Address on retirement, delivered on 25 May 1960.

graves indicate that physical death was not considered the end, but that the soul was believed to continue its existence in the other world. Furthermore, hate, fear, envy and above all the intense fear that the dead might come back, were presumably the motives that led very primitive man to treat the corpse in this way, subtler feelings not yet having been born in his mind.

The Shona[4] of Rhodesia bury their dead in a recess in a grave dug for the purpose after a ritual preceding the actual placing of the body in the grave. The body is placed in the recess on its side with the head resting on 2 stones as a pillow. Usually the right hand is placed between the head and the stone and the left on top of the face. Plates and other strictly personal utensils are buried with the corpse. This is followed by further rituals. There thus appears to be a similarity between the burial of prehistoric man and the Shona burial, both indicating a belief in a survival of the soul in the other world.

Bouman also points out that all we know about the structure of that most primitive group, the horde, points to the fact that the small family group was despotically ruled by an older man, who tyrannized, pitilessly and egotistically, his wives and offspring, undisputed master as he was and who could only maintain his power by brute force. But as soon as his strength began to fail, his sons killed him, and fought amongst themselves the battle for supremacy. They had good reason indeed not to want the old tyrant back to take the lead again. As his leadership, however, depended only on his strength, courage and power, his offspring wished most of all to preserve these precious gifts from destruction and loss. Thus his sons were compelled to eat the body of the old family father, absorbing in this way the power that had caused them to suffer so cruelly, and thus preserving it for themselves.

In connexion with the so-called ritual murders in Basutoland and, periodically, in Zululand, it is known that the body is found with parts missing. These parts are used in the preparation of medicine (*muti*) to be taken by someone who is looking for certain benefits of a spiritual nature, e.g. to increase the power of a particular chief. We thus find these killings in prehistoric times recurring in modern times. At the same time the idea of the soul persisting in the hereafter runs through the theme as indicated by the rituals associated with them.

Turning to art, it is well known that in the foothills of the Pyrenees in the South of France there are many caves with beautiful rock drawings made by prehistoric man in the palaeolithic era. These drawings were not made as a pastime or to appeal to any aesthetic feelings. It was used as a means to influence the hostile world, and was part of a cult before the dawn of religion. This art expressd reality.[3]

As expressed by Broderick[5] there can be no doubt that prehistoric painting was executed in order to be utilized to some definite end. Religion, it has been said, is in its origin a technique for success. Success for early men meant luck in the chase; and for a hunter to be lucky he must find plenty of game, he must kill as much as he wants, and a little more for pride's sake, and he must escape death and destruction. No doubt, in the Later Old Stone Age of Europe, painting and ceremonies performed before paintings, were held to assist very materially in securing this triple luck: abundant quarry, easy targets and preservation of the hunter.

The primitives believed that an image had some magical connexion with the living object. By picturing the animal he wanted to hunt, the primitive gained power over it. He directed his spear towards the picture to strike the heart, and by colouring that place with red ochre, he let it bleed to death; or he made a clay statue of some animal and then slew it by injuring it mortally with his axe. Only then was he able to kill his game afterwards. Magic pictures or sculptures in the caves still show the wounds and many decapitated clay statues have been found. This is the hunting magic.

Frobenius has told a story of his adventures with the pygmies of the Ituri Forest in Central Africa. The little men wanted to kill an antelope, so on the eve of the hunt they plucked clear a patch of ground and traced upon it the outline of an antelope. When, at dawn, the sun's rays struck the picture, a woman stood up with outstretched arms near the image and sang an enchantment while one of the hunters shot an arrow, hitting the antelope figure in the neck. Three hunters then bounded off into the bush while the woman remained by the magic picture. In not so long a while, back came the men with an antelope killed by a shot in the neck. The magic picture was then daubed with the hair and the blood of the dead beast. The magic round was accomplished.[5]

To this day, the Australian aborigines paint for plenty and repaint for plenty on the same old sites.

Compare the above with the discoveries in the caves in Southern Africa. Bouman[3] states

of the Bushmen that, having long ago migrated from the North, they are probably the last descendants of those late palaeolithic races once populating Spain and the South of France. To-day they are a race dying out in most abject and wretched circumstances. But they have inherited from their prehistoric ancestors a strong love of art and have left behind them a long trail from the north of those very interesting pictures on stones and rock walls. In this marvellous and realistic art we see not only the game they hunted and the way they hunted it, but even some of the chief historic events of the tribes which were recorded in this way. The Bushmen, however, have depicted not singular figures only but also groupings, e.g. ceremonial dances giving an indication of some of their beliefs, cult and customs.

Let us now consider some of the cults or religious beliefs in Southern Africa amongst the Bantu. Seligman[7] writes that ancestor worship forms the basis of the religious life of the Bantu. It is primarily a cult, and is everywhere patrilineal (except with the Herero). A man worships his own ancestors in the male line and these are the only relatives whom he can ever approach. The head of the family conducts the worship and, whatever its origin, the most obvious function of ancestor worship is to maintain the social bond of the family and to keep the other members of the family subordinate to the head, who alone has the power to intercede with the dead. The only exception to the domestic nature of the cult is that the ancestors of the chief are the source of strength for the whole tribe; just as the chief and his family guide the fortunes of the living, so his ancestors care for the whole people of their ruling descendant. Only members of the chief's family, however, can approach them on behalf of the tribe as a whole and *thus it is that among the Bantu religion provides a powerful sanction for the chieftainship.*

Besides the ancestral spirits the Southern Bantu also believe in a universal deity who never was human. But this universal spirit differs from people to people. Amongst the Shona the deity is known as *Mwari*[4] or *Musikavanhu,* who made the earth, created all of us (man, woman and child), brought into being the animal, insect and vegetable worlds, the mountains, the sky, the sun and the moon, the air which we must breathe in order to live, as also all the tribal spirits and ancestral spirits. But the Shona do not know *Mwari* or approach him directly except through *Chaminuka,* the great messenger, the link between *Mwari* and the people. *Chaminuka,* as also the tribal and domestic ancestor spirits, again has a medium through whom he is approached by the tribe as a whole. It would appear, therefore, that it is a system of spiritualism, all acts of which are performed with rigid rituals which include the drinking of beer, and the eating of meat and stiff porridge. It is believed that the spirits also eat, drink beer and smoke tobacco left for them at the *rushanga* (altar). The tribal spirits and their mediums when possessed drink sweet beer only. The lesser spirits may have either strong or sweet beer, dependent on the preference of the particular spirit. Most of the rituals are accompanied by animal sacrifices.

The question has arisen how it is possible for the Shona to be a practising Christian and yet believe in his own religion. It appears that some Shona would classify Jesus Christ, the Great Spirit of the White People, as another *mhondoro* (*Mwari* spirit) like *Chaminuka,* who bestows innumerable blessings on the people. Thus one finds amongst the Shona 3 kinds of religionists. The first is the Shona religionist, the second the Christian and the third the one who has adopted something of each religion.

The Zulu has a somewhat similar religion in that the Creator is *Unkulunkulu* ('The Great One'), and a Weather God *Inkosi* ('Chief'). *Unkulunkulu* is the creator of man, and he also made the sun, and the moon, etc.; though he is the great, great ancestor of the people, his 'house' is not represented on earth; he is prior to all peoples. He is, however, not worshipped for he has no intimate representatives on earth. *Inkosi,* on the other hand, is in the firmament and he it is who brings all the storms and natural happenings. Certain men are beloved of *Inkosi* and they can control Heaven provided they lead a life of strict ritual purity and Heaven too will revenge any harm to them.

Similar ideas are found in various other tribes.

Woven into all this there are definite strict rules about marriage, family life and death. The whole is aimed at a good communal life benefiting the whole tribe. When members of a tribe become detribalized, losing the religious tenets without accepting any other firm religion, the community is faced with great difficulties leading to disintegration of communal life, delinquency and crime. At present Southern Africa is faced with this problem, though it is hoped that this will be a transitory period.

According to palaeopsychology, people are doomed to live through the experiences of their ancestry in order to improve. Keeping this in mind, we see that the culture of the Western nations has taken some thousands of years to develop to the prevent stage. The Bantu peoples have started emerging from their primitive states over a mere 300 years at the most; yet it is expected of them that they should already measure up fully to the culture of the West. In considering this it should not be forgotten that it is but a few hundred years ago that the peoples of the West were still burning witches at the stake and holding that epileptics were people possessed of spirits (*morbus sacer*).

If we now consider the future in relation to present-day circumstances, I would recall a sentence used above, viz.:

'The only exception to the domestic nature of the cult (that a man worships his own ancestor) is that the ancestors of the chief are the source of strength for the whole tribe . . . and *thus it is that among the Bantu religion provides a powerful sanction for the chieftainship.*'

This, as our history has shown, has resulted in complete autocracy. It is thus to be expected that with the culture as it exists to-day, such autocracy will still be necessary in order to retain a cohesion of either the tribe or state. Such autocracy, though perhaps in milder form, is to-day represented by the rule of the White man. If this rule is now suddenly released or removed and handed over to the Bantu, an autocracy of far greater severity must be expected, not because the then rulers would wish to create this, but because with the basic cults still in existence as they are, this will be a necessity in order to maintain peace and keep control within the state.

Experience has shown that inter-tribal conflicts are anything but of the past. A certain amount of pacification has been possible, but with the slightest release of control these conflicts may flare up once more. It is only necessary to follow recent events in the Congo to realize this.

It is my considered opinion that with the culture of the Bantu in its present state of development, autocratic states must precede any further development into democratic states. Furthermore, a lot depends on how the religious concepts will change or be lost in the future, and how fast such progress to a democracy will be. In this respect it should be noted that progress is well nigh impossible since the cult of ancestor-worship leads to severe rigidity in custom; for the Shona's chief care is to live a life that satisfies the family and tribal spirits and in this way he becomes rigidly bound by custom and tradition. This leads to strong resistance to change of custom and stresses, the uniformity of life and even of occupation which may be described as a compulsory uniformity. The individual is not a free man, for he must do as others in his society do. There is no scope of originality either good or bad.

Lastly, it remains to be seen whether the tribal system as existing to-day can be maintained at all in such a state, since in the world to-day, interstate influence and dependence cannot be avoided, if real progress is to be made.

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NOTES AND NEWS : BERIGTE

Dr. R. Geerling has joined Dr. Frances Reinhold in partnership in a neurological and psychiatric practice at 617 Pan Africa House, 77 Troye Street (corner of Jeppe Street). *Telephone*: 22-8631.

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Dr. I. Friedman and Dr. R. Glyn Thomas have joined Drs. M. H. Fainsinger, D. R. Morris and H. Jackson in partnership as Diagnostic Radiologists at 318 Pan African House, Troye Street, Johannesburg. (*Telephone*: 22-6602).

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Dr. Louis F. Freed, M.D. (Rand), was recently invited by the Scientific Council of the New York Academy of Sciences to become a Member of the Academy on account of his contributions to the advancement of science.

He was also invited by Dr. Armando Troni, General Secretary of *Centro Studi e Scambi Internazionali*, Rome, Italy, to become a Member of the International Committee of that Association.

Dr. Freed was elected President of the St. Andrews University Alumnus Association of South Africa in December 1960.

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THE EASTER STAMP FUND FOR CRIPPLES

The rehabilitation of a cripple embraces the broadest concept of cripple care on all levels of service: Government, Provincial, Local Authority and Voluntary.

The implementation of this service depends upon the availability of trained personnel.

The Easter Stamp Fund for Cripples has contributed towards the training of essential personnel in

many ways. It has subsidized the training of orthopaedic surgeons, orthopaedic technicians, physiotherapists, occupational therapists and social workers, including overseas training of South African personnel. Over £15,000 has been provided for special orthopaedic training of nurses, who are so essential in the restoration of cripples. Grants have been made to assist the establishment of rural orthopaedic clinics, to provide transport to enable district after-care work to be carried out, and to provide the trained district nurses to do this work. In addition, about one quarter of the net proceeds of the annual Easter Stamp Campaign is given *pro rata* to the National Council's 9 affiliated Cripple Care Associations to assist in developing the work in their respective areas, which is done with enthusiasm for all races.

The Easter Stamp Fund helps to ensure the restoration of cripples. Practitioners are asked to support the annual campaign generously, as funds are urgently required.

* * *

THE TREACHER COLLINS PRIZE ESSAY

Under this title, the Council of the Ophthalmological Society of the United Kingdom has instituted a prize of £100, awarded triennially, for the best essay submitted upon a subject selected by the Council.

The Prize shall be open to qualified medical practitioners of any nationality.

The essay shall be written in the English language.

The subject for the next award of the prize is *Demyelination and the Eye.*

The winning essay may be published in the *Transactions of the Ophthalmological Society,* if the Council so desire.

The closing date for sending in Essays for this award is 31 December 1962. Essays should be submitted to the Honorary Secretary, Ophthalmological Society of the United Kingdom, 47, Lincoln's Inn Fields, London, W.C.2, from whom any further particulars can be obtained. No name should be on any essay, but a distinguishing pseudonym or quotation, which should be upon a sealed envelope containing the candidate's name and address, should accompany the essay.

* * *

SCHERING FOUNDATION SYMPOSIUM

A group of distinguished scholars from many parts of the world gathered in San Francisco recently for a 3-day symposium entitled *Man and Civilization: Control of the Mind,* presented by the University of California Medical Center. Sponsored by the Schering Foundation, the symposium focused on the factors controlling the mind and their interactions.

Two and a half days were devoted to individual presentations on *The Mind and Its Integration, The Influence of Drugs on the Individual, The Mind and Society* and *The Impact of Technology on the Mind.*

The last half day consisted of panel discussions involving 6 groups meeting separately and simultaneously. Particular attention was given to the role of psychopharmacology in increasing understanding of the cerebral function.

The symposium was conducted in the Auditorium, Medical Sciences Building, University of California Medical Center, Second and Parnassus Streets, San Francisco, Calif.

Established and supported by Schering Corporation, the Schering Foundation is a non-profit concern dedicated to philanthropic support of charitable, educational and scientific projects, primarily in the medical and health field.

* * *

ELI LILLY MEDICAL RESEARCH FELLOWSHIP (SOUTH AFRICA) 1961

1. Applications are invited from suitably qualified medical practitioners for the Eli Lilly Medical Research Fellowship (South Africa).

2. The Fellowship is for the purpose of medical research and is not intended for post-graduate clinical study. It is available for one year.

3. The value of the Fellowship is 3,600 United States dollars for one year and, in addition, travelling expenses will be allowed, based on a travel budget to be submitted by the Fellow. This will cover the cost of travel and incidental expenses from the place of residence of the Fellow to the approved place of study in the United States of America, as well as the return journey.

4. Other things being equal, preference will be given to candidates under 40 years of age.

5. Any medical practitioner *registered* in South Africa will be eligible for this award.

6. There will be no discrimination for the award on grounds of race, colour, creed or sex.

7. The candidate must submit evidence of his capacity to do original research work.

8. The candidate must submit a programme of the proposed research. He is advised to submit an alternative scheme in case of difficulties about the first one.

9. It is advisable for the candidate to indicate at what institution he proposes to undertake the research and he should also state whether he is in a position to make any arrangements to carry out the research at the proposed institution.

10. The successful candidate must undertake to return to South Africa for a period of at least two years after the termination of the award.

11. The Selection Committee consists of:
Dr. H. Brown (*Cape Town*);
Prof. F. Forman (*Cape Town*);
Prof. I. Gordon (*Durban*);
Dr. A. Landau (*Cape Town*);
Dr. D. P. Marais (*Cape Town*);
Prof. S. F. Oosthuizen (*Pretoria*);
Mr. G. Sacks, F.R.C.S. (*Cape Town*);
Dr. G. Selzer (*Honorary Secretary, Cape Town*);
Dr. H. A. Shapiro (*Honorary Chairman, Johannesburg*).

12. Applications must be forwarded to:
Dr. H. A. Shapiro (*Honorary Chairman*),
Selection Committee, Eli Lilly Medical Research Fellowship (South Africa),
P.O. Box 1010, Johannesburg.

They must reach him not later than 1 May 1961.

They should be concise, and accompanied by the names of not more than two suitable referees. Testimonials must not be included.

PREPARATIONS AND APPLIANCES

GLUCOPHAGE

A NEW ORAL HYPOGLYCAEMIC AGENT

Westdene Products (Pty.) Ltd. announce the introduction of **Glucophage,** a new oral hypoglycaemic agent.

Glucophage is N.N. Dimethyldiguanide Hydrochloride, discovered in the Research Department of Rona Laboratories Ltd. in France. Its mode of action

Each tablet contains 0.5 Gm. N.N. dimethyl-diguanide hydrochloride.
50 TABLETS
Glucophage
trade mark
LA 6023
To be taken only as directed by the Physician
RONA LABORATORIES LTD., LONDON, W.1

is still incompletely understood but it has been shown experimentally that it has a peripheral action, thus differing fundamentally from that of the sulphonylurea compounds. Toxic effects on blood, liver and kidneys do not occur and **Glucophage** is normally well tolerated, although a few cases of digestive upsets, such as anorexia, nausea and diarrhoea in a mild form have been encountered. Reports indicate that side effects are appreciably less than with phenethyldiguanide.

Glucophage has been used successfully in all forms of diabetes, even in severe cases with vascular degeneration. It is most effective in early and less acidotic diabetes and also in very obese patients. Long-standing or insulin-resistant diabetics or cases where sulphonylureas have been ineffective, may respond to **Glucophage.** According to results of therapy with **Glucophage** in a random group of diabetics, success can be expected in 80—85% of patients.

Glucophage is slowly cumulative and the initial dose cannot therefore be used as a measure of susceptibility of the patient to therapy. Assessment should in fact be delayed until the 15th day. The dosage, which varies from ½ to 6 tablets per day, must be adjusted for each individual patient, because individual sensitivity to this compound is variable.

Glucophage is now available in boxes of 30 or 500 tablets (500 mg.) packed in aluminium foil. Further information may be obtained from the sole South African distributors:

Westdene Products (Pty.) Ltd., P.O. Box 7710, Johannesburg.

REVIEWS OF BOOKS

LIGHT COAGULATION

Light Coagulation. By Gerd Meyer-Schwickerath, M.D. Translated by S. M. Drance, M.B., F.R.C.S. (Eng.). (1960. Pp. 114. With 55 Figs. R8.10.
St. Louis: The C.V. Mosby Company.

During 1949 the ophthalmological world was thrilled to hear of a new technique being evolved for the treatment of certain cases of retinal detachment.

This new approach to the treatment of ocular conditions is described in Gerd Meyer-Schwickerath's book *Light Coagulation,* which has now been admirably translated into English from the original German by Stephen M. Drance, who visited Dr. Meyer-Schwickerath's clinic and himself used the light coagulator before producing this very readable textbook.

The volume gives all the essential theoretical, physical, pathological and practical information required for using photo-coagulation; the indications, contra-indications and complications are fully described. The photo-coagulator has been most used in the treatment of cases with established retinal detachments, and for those eyes which may be predisposed to detachments. The treatment of such cases is dealt with very fully.

The author also describes his treatment of intra-ocular tumours, diabetic retinopathy, Eales' disease and other intra-ocular conditions, and includes a short chapter on the use of photo-coagulation for iris conditions, surface tumours of the globe and skin.

This text will be welcomed by English-speaking ophthalmologists and will be a great asset to those who have the opportunity of using the light coagulator.

AIR POLLUTION

Air Pollution. By various authors, Geneva, 1961 (World Health Organization: Monograph Series, No. 46), 442 pages. R 4.
Pretoria: Van Schaik's Bookstore (Pty.) Ltd., P.O. Box 724.

Wherever men collect they tend to pollute their environment. The pollution of rivers, streams and wells, of the surrounding of dwellings, and of places of work has come to be recognized as harmful to health, and in most parts of the world pure water, the sanitary disposal of waste matter, and hygienic working conditions receive at least lip service. But only recently, and largely under the stimulus of dramatic events like the great fogs of Donora in 1948 and London in 1952 and the regularly recurrent smogs of Los Angeles, has anything like the same attention been paid to pollution of the atmosphere. Air pollution is nevertheless a problem of steadily increasing importance in the world, one that affects modern civilization at a multitude of points, in its economic and social as well as in its public health aspects. More and more countries are becoming industrialized; the use of internal combustion engines is expanding at enormous speed; the population of the world is growing, and tending progressively to accumulate in cities; industrial effluents discharged into the atmosphere are annually increasing in amount, diversity and complexity; and as the seriousness of the situation increases the difficulties of effective control become steadily greater. Unlike the pollution of rivers or of factories, too, air pollution is not a relatively simple problem; the identification of the pollutants is in itself extremely difficult, and the number of variable factors implicated is immense.

The present monograph brings together up-to-date knowledge about various aspects of air pollution, ranging from its effects on man, animals, and plants to the physical and chemical nature of air pollution, the role of meteorology, methods of identifying the various pollutants, and methods of control; and it contains a lengthy discussion on the most menacing recent form of air pollution—radioactive pollution. The authorities who contribute the various chapters are drawn from many countries, and, to make sure that world trends in research into air pollution are faithfully represented, each chapter was submitted by the World Health Organization to a panel of internationally known experts. The information presented is therefore authoritative as well as comprehensive. It is hoped that the monograph will be of use to public health staff in the control of air pollution, and that it will be a contribution towards solving the many complex problems involved.

CONYBEARE'S TEXTBOOK OF MEDICINE

Textbook of Medicine. Ed. by Sir John Conybeare, *K.B.E., M.C.*, D.M. (Oxon.), F.R.C.P. and W. N. Mann, M.D. (Lond.), F.R.C.P. (1961. 13th ed. Pp. 964 + Index. With Illustrations. R4.50 (£2 5s.). Postage 35c. (3s. 6d.).
Edinburgh: E. & S. Livingstone, Ltd.

The 3 years which have elapsed since the previous edition of this book appeared have made a revised version of this practical text desirable. The section on *Diseases of the Kidney* (by Prof. M. L. Rosenheim) is entirely new and there are equally radical changes in the section on *Venereal Diseases*. Other important revisions include *The Liver, Pancreas and Peritoneum, Blood, Jaundice* and the *Reticuloses*, as well as *Infectious Diseases*, the *Endocrines, Ionizing Radiations, Skin Diseases*, the *Cardio-Vascular System*, the *Alimentary Canal*, etc. The oral anti-diabetic agents are reviewed and the section on *Psychological Medicine* ' has been considerably re-written.'

The oral anti-diabetic drugs, some of which are more properly described as sulphonylurea and not sulphonamide derivatives, are surveyed fairly fully, the conclusion being that ' chlorpropamide is the most recent and effective oral agent at present in general use ' (p. 259). Attention is drawn to the important fact that tolbutamide-resistant cases may respond to chlorpropamide. The author is not impressed with an anti-diabetic role for the diguanides at present.

Tables of normal physiological values, equivalents, and a list of proprietary preparations and their similar official counterparts are conveniently printed inside the covers of the volume.

The book is adequately illustrated. It should readily maintain its leading position as one of the most useful and practical reference texts for the student and the practitioner.

EPILEPSIA

Epilepsia: Lennox Issue (1960. Vol. 1, No. 4/5 $5.00).
Holland: Elsevier Publishing Company.

The June edition of *Epilepsia*, the Journal of the International League against Epilepsy, is dedicated to William Gordon Lennox, who might be called the founder of modern electro-encephalography. In 1935 he published a paper that was to become a classic, *The Electro-Encephalogram in Epilepsy and in Conditions of Impaired Consciousness*. The first of the 26 excellent articles on epilepsy in this *Journal* is a historical note by Dr. Mary A. B. Brazier on *The EEG in Epilepsy*, with particular reference to Dr. Lennox and his research.

Among other excellent articles in the June edition of particular interest is Dr. W. F. Caveness' paper on the *Trend in Public Opinion Toward Epilepsy over the Past Decade*. There is an excellent paper by C. T. Lombroso on *Diamox* and an excellent article from Denmark on the *Correlation of Electro-Encephalograbic Findings with the Crash Rate of Military Jet Pilots*. This edition of *Epilepsia* should be read by all neurologists.

The final article by W. Penfield ends most fittingly: The human brain is the vast and undiscovered country. There, those who listen will hear the ' everlasting whisper '—something hidden, go and find it.

CORRESPONDENCE

EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE MEDICAL, DENTAL AND PHARMACY ACT, 1928 (ACT NO. 13 OF 1928, AS AMENDED)

To the Editor: Provision is made in Section 74 (*b*) of the above-mentioned Act whereby, in certain circumstances, persons who are not permanently resident in South Africa, may be exempted by the Hon. the Minister of Health, in consultation with the Council from the registration requirements of the Act for a specified period.

The Council requires *inter alia* that applications for exemption from the registration requirements of the Act, in terms of Section 74 (*b*) thereof, should be lodged with the Council at least *three months* prior to the period in respect of which exemption is applied for. The reason for this is to enable the Executive Committee of the Council to give the necessary attention to the matter and to make a recommendation to the Hon. the Minister. Ample time should also be allowed for obtaining the approval of an exemption from the Minister, as he may not always be available to attend to administrative procedures of this nature.

The Executive Committee of the Council has found that in the majority of applications for exemption which have reached the Council, the above requirement has not been complied with. This may be due to the fact that this particular requirement of the Council is not well known to the profession, and the official bodies sponsoring applications for exemption from the registration requirements of the Act.

At the most recent meeting of the Executive Committee it was decided that the Editors of the various medical and dental journals in South Africa be requested to publish in their respective journals the policy of the Council in connexion with the procedure to be adopted for applications for exemption under the provisions of Section 74 (*b*) of Act 13 of 1928, as amended, with special emphasis, on the fact that all applications for exemption must be lodged with the Council at least 3 months prior to the period in respect of which exemption is applied for.

The Council's policy in connexion with the procedure to be adopted for applications under Section 74 of the Act is as set out in the memorandum appended hereto, and it would be most highly appreciated if this could be published in your journal.

W. H. Barnard, *Registrar.*

The South African Medical & Dental Council,
P.O. Box 205, Pretoria.

MEMORANDUM FROM THE SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

EXEMPTION FROM REGISTRATION REQUIREMENTS OF THE MEDICAL, DENTAL AND PHARMACY ACT (ACT 13 OF 1928, AS AMENDED)

PROCEDURE FOR APPLICATIONS FOR EXEMPTION UNDER PROVISIONS OF SECTION 74 (B) OF THE ACT

1. Provision is made in Section 74 (*b*) of the Act whereby, in certain circumstances, persons may be exempted from the registration requirements of the Act. This Section provides that the Minister of Health, after consulting the Council, may exempt from the registration requirements of the Act, any person not permanently resident in the Union, who is engaged:

i. Solely in medical or pharmaceutical research work;

ii. In post-graduate work under the control or direction of any university in the Union in which a faculty of medicine has been established; or

iii. In demonstrating to persons registered under the Act, or the Nursing Act, 1944, medical, surgical, dental or pharmaceutical techniques,

and such exemption shall be valid for such period only as the Minister may prescribe.

2. The discretion conferred on the Hon. the Minister by the above section could not have been intended for all persons who hold medical qualifications and who may wish to come to the Union to perform acts pertaining to the calling of a medical practitioner. The principal element of the Ministerial discretion must be whether the scientific value of the person's activity is such that it warrants placing him beyond the statutory control which has been established by Act of Parliament for the whole profession. It would be unwarranted to involve the discretion of the Hon. the Minister for other cases. Consequently, in submitting applications to the Council for a recommendation to the Hon. the Minister that a particular person be exempted from the registration requirements of the Act, a reasoned submission should be made as to the scientific value of the person's activity during the period of his exemption.

3. In addition to the above submission, all applications for exemption to the Council should contain the undernoted information:

(*a*) Full names of person in respect of whom exemption is desired;

(*b*) His qualifications;

(*c*) The period for which exemption is desired;

(*d*) An assurance by the Body sponsoring the application that the person, if exempted, will be apprised of the provisions of the Act relating to the performance of acts pertaining to the calling of a medical practitioner or a dentist, and that the Body will ensure that a person recommended for exemption will not perform any such act until such time as the exemption has been duly signed by the Hon. the Minister. The Council desires to stress the assurance required in this respect, in as much as it is most anxious that any possible embarrassment to our distinguished guests should be avoided.

4. All applications for exemption must be lodged at least three months prior to the period in respect of which exemption is applied for. This is to enable the Council's Executive Committee to consider the application, to come to a conclusion regarding it, and to make a recommendation thereanent to the Hon. the Minister. It should be borne in mind that the Hon the Minister may not always be available to attend to administrative procedures of this nature, and ample time should be allowed for obtaining his approval of an exemption. The time factor is of the essence of an application, and will be departed from in exceptional circumstances only.

5. If a person is exempted from the registration requirements of the Act in terms of Section 74 thereof, he can be granted exemption only for the specific purposes set out in that Section, and he may then only do what the law allows him to do. He cannot be exempted from registration for the purpose of consultations or seeing and treating patients.

6. Provision, however, is made in the Act whereby a person who has come, or intends to come, to the Union at the request of a medical practitioner who is registered under the Act, for the purpose of examining or treating an individual patient, and who intends to return to the country of his domicile as soon as he has so examined or treated such patient, may if otherwise entitled to registration, be registered as a medical practitioner, notwithstanding the fact that he is not domiciled in the Union, and such registration shall be effective for a period not exceeding thirty days. A person registered under these provisions of the Act shall not examine or treat any patient other than the particular patient in connection with whose examination or treatment he has been so registered and such other patients as he may specifically be authorized by the Council to examine or treat.

7. Medical practitioners from other countries cannot examine or treat patients in South Africa unless they are registered specifically for the purpose of examining and treating such patients in terms of the provisions referred to above.

8. In all other cases the provisions of Section 34 of the Medical, Dental and Pharmacy Act apply.

Section 34 of the Act provides that:

'34. (1) Any person not registered as a medical practitioner or as an intern who—

(*a*) for gain, practises as a medical practitioner (whether or not purporting to be registered) or performs any act specially pertaining to the calling of a medical practitioner; or

(*b*) pretends, or by any means whatsoever holds himself out to be a medical practitioner or intern (whether or not purporting to be registered), or uses the name of medical practitioner or intern or any name, title, description or symbol indicating or calculated to lead persons to infer that he possesses a degree, diploma or other qualification as a medical practitioner, doctor of medicine, physician, surgeon, accoucheur or intern, or that he is registered as a medical practitioner or intern under this Act,

shall be guilty of an offence and liable on conviction to a fine not exceeding one hunderd pounds.'

9. A person not registered under the Act may therefore not practise as a medical practitioner or perform any acts specially pertaining to the calling of a medical practitioner. Such a person may also not hold himself out to be a medical practitioner. If he were to do so he would be contravening the law.

A CLINICAL TRIAL OF PARABAL IN GENERAL PRACTICE

To the Editor: I recently had the opportunity of testing a new drug called Parabal for the treatment of psychoneurosis. Parabal is phenobarbitone sodium dihydroxyaluminiumaminoacetate containing 1/6th of a grain of sodium phenobarbitone combined with an amino acid derivative.

All cases of epilepsy were excluded from this trial which was carried out on 52 patients (41 women, 10 men and 1 child).

These patients were instructed to take 1 tablet twice a day for 7 days (the child was given ¼ tablet *t.d.s.*) and they were advised that, should they feel it necessary, the dosage could be increased to 1 tablet 3 times a day. At the end of the 7-day course 48 patients registered approval and improvement in their general outlook but complained of some sleepiness, despite the claim of the manufacturers to the contrary. They were quite content, however, to put up with this temporary drowsiness in view of their over-all improvement. The remaining 4 patients, all women, complained of nausea and excessive tiredness. Each course of treatment lasted for some months during which time I contrived to supply each patient with at least one batch of placebos specially manufactured for the purpose. In every case but one the patients returned after a very short time questioning whether they had been given the wrong tablets as they felt 'they had gone back.' The exception initially preferred the placebos as she found that they made her less sleepy but she soon returned for the original tablets which she had found much more effective.

One patient who had been treated at a psychiatric centre for a long period was showing no improvement whatsoever. I therefore changed her treatment to Parabal, with excellent results. The consultant when he next saw her was delighted with her progress and wrote to ask me to continue with the tablets which I had given her.

In view of these results I formed the opinion that Parabal has definite advantages over phenobarbitone as many of the patients who have been on the latter drug for a considerable period have ceased to require regular treatment after a short course of Parabal.

There is, of course, the added advantage of the tablets being 1/6th strength of the B.P. product and therefore the dangers of accidental or premeditated overdose are thereby lessened.

I wish to thank the makers, the West Pharmaceutical Co. Ltd. for their generous supply of tablets and for their co-operation.

H. I. Howard.

William Budd Health Centre,
Leinster Ave., Bristol 4, England.

AN ORAL CONTRACEPTIVE

To the Editor: In the Editorial in your journal of 11 March 1961, in discussing the cost of the use of Enavid as an oral contraceptive, the statement was made (at p. 89) that 'a modest smoker of some 20 cigarettes a day smoking regularly throughout the year spends about twice as much as his wife would spend on this hormone as a contraceptive measure.'

We are happy to report that the smoker would now have to smoke only 8 cigarettes per day in order to equal his wife's expenditure on the oral contraceptive!

Within 5 weeks of the introduction of Enavid as an oral contraceptive in Southern Africa, the United Kingdom and the United States of America, the tremendous demand has brought about a price reduction from R3.00 to R2.50 per month.

In the same period indications are that more than 1,000 patients were started on this form of therapy in Southern Africa alone. If the demand for this form of contraception can reach the level where the non-European population of our country can afford the therapy, then indeed this treatment may provide a solution to the 'world-wide concern about the problem of controlling population and restricting its increase in certain parts of the world to a level commensurate with what the economy of the area can support.'

A. Sachs.

Keatings Pharmaceuticals Ltd.,
P.O. Box 256,
Johannesburg.

ABSTRACTS OF HUMAN DEVELOPMENTAL BIOLOGY

To the Editor: This abstracting publication, first issued in January 1961, covers the experimental and clinical aspects of normal and pathological human development, including fundamental aspects of morphogenesis in general, of reproduction, of transplantation in postnatal life, and of pathologic (tumour) growth, as compared with normal development, differentiation and growth.

This new journal of Excerpta Medica, developed and published with the aid of a grant from the United States Public Health Service, will contain approximately 2,000 abstracts a year, and will include classified subject and author indexes. It will thereby contribute to the collaboration between all specialists in the field of obstetrics, surgery, pediatrics, social medicine, embryology, teratology, experimental teratology, genetics, immunology, etc. by integrating information on all these disciplines as far as they concern the problems of normal and abnormal development, reproduction and transplantation.

The subscription rate amounts to US$ 17.00 per volume (January-December), or the equivalent in local currency.

Excerpta Medica Foundation,
Prof. M. W. Woerdeman, M.D., D.Sc.
Chief Editor.

119-123, Herengracht, Amsterdam.
The Netherlands.